

Amendments to the Claims:

Please cancel claims 25-31 and amend the claims as follows. This listing of claims as amended replaces all prior versions, and listings, of claims in the application.

1. (Currently Amended) A semiconductor processing apparatus comprising:
a central substrate transfer enclosure having at least one substrate transfer robot positioned therein;

a substrate activation chamber in communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot;

an electroless substrate plating chamber in communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot;

a substrate spin rinse dry chamber in communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot;

a substrate annealing chamber in communication with the central substrate transfer enclosure and accessible to the at least one substrate transfer robot; and

at least one substrate pod loader in communication with the substrate transfer chamber and accessible to the at least one substrate transfer robot.

2. (Original) The semiconductor processing apparatus of claim 1, wherein the at least one substrate transfer robot comprises a first substrate transfer robot and a second substrate transfer robot, wherein the first and second substrate transfer robots have a handoff positioned therebetween.

3. (Currently Amended) The semiconductor processing apparatus of claim 2, wherein the first substrate transfer robot is configured to access at the least one substrate pod loader, the substrate activation chamber, and the substrate plating chamber, and the second substrate transfer robot is configured to access the at least one substrate pod loader, the substrate spin rinse dry chamber, and the substrate annealing chamber.

4. (Original) The semiconductor processing apparatus of claim 2, wherein the first substrate transfer robot is configured to pick up a substrate in the substrate plating chamber and transport the substrate to the handoff position and the second substrate transfer robot is configured to pick up the substrate from the handoff position and transfer the substrate to the substrate spin rinse dry chamber.

5. (Original) The semiconductor processing apparatus of claim 2, wherein the first substrate transfer robot is positioned in a first region of the transfer enclosure and the second substrate transfer robot is positioned in a second region of the transfer enclosure.

6. (Original) The semiconductor processing apparatus of claim 5, wherein the first region is in communication with the activation chamber and the plating chamber and the second region is in communication with the spin rinse dry chamber and the annealing chamber.

7. (Currently Amended) The semiconductor processing apparatus of claim 1, wherein the a substrate activation chamber comprises:

a centrally positioned rotatable substrate support member configured to support a substrate in a face up position; and

a fluid dispensing assembly configured to dispense an activation solution onto a substrate surface.

8. (Original) The semiconductor processing apparatus of claim 1, wherein the substrate plating chamber comprises a rotatable substrate support member configured to support a substrate in a face up configuration and a pivotally mounted plating fluid dispensing nozzle positioned above the substrate support member.

9. (Original) The semiconductor processing apparatus of claim 1, wherein the substrate plating chamber comprises:

a rotatably mounted substrate support member configured to secure a substrate thereto in a face up configuration;

an evaporation shield having a diameter approximately equal to the substrate support member and a substantially planar lower surface, the evaporation shield being selectively positioned above the substrate support member, the evaporation shield having a bore formed therein for communicating a processing solution therethrough to the lower surface thereof; and

a fluid dispensing assembly configured to dispense a processing fluid onto a substrate via the bore in the evaporation shield.

10. (Original) The semiconductor processing apparatus of claim 9, wherein the lower surface of the evaporation shield is configured to be positioned between about 1 mm and about 5 mm from the substrate support member in a processing position.

11. (Original) The semiconductor processing apparatus of claim 9, wherein the evaporation shield is selectively movable between a substrate processing position and a substrate loading position.

12. (Original) The semiconductor processing apparatus of claim 9, wherein the evaporation shield is configured to maintain the processing fluid in a processing region defined by a surface of the substrate and the lower surface of the evaporation shield with an outer seal member.

13. (Original) The semiconductor processing apparatus of claim 12, wherein the evaporation shield is configured to maintain the processing fluid in the processing region through a meniscal force.

14. (Original) The semiconductor processing apparatus of claim 9, wherein the evaporation shield is selectively rotatable.

15. (Original) The semiconductor processing apparatus of claim 1, wherein the substrate spin rinse dry chamber comprises a rotatable substrate support member configured to support a substrate thereon and a substrate rinse solution dispensing device positioned above the substrate and configured to dispense a rinsing fluid onto the substrate surface.

16. (Original) A semiconductor plating system, comprising:
- a central transfer enclosure;
 - a first substrate transfer robot positioned in a first region of the substrate transfer enclosure;
 - a second substrate transfer robot positioned in a second region of the substrate transfer enclosure;
 - at first substrate pod loader in communication with the first region of the substrate transfer enclosure;
 - a second substrate pod loader in communication with the second region of the substrate transfer enclosure;
 - an activation enclosure in communication with the first region of the substrate transfer enclosure;
 - a substrate plating enclosure in communication with the first region of the substrate transfer enclosure;
 - a substrate spin rinse dry enclosure in communication with the second region of the substrate transfer enclosure;
 - a substrate annealing enclosure in communication with the second region of the substrate transfer enclosure; and
 - a substrate handoff positioned in the substrate transfer enclosure and in communication with the first region and the second region.
17. (Original) The semiconductor plating system of claim 16, wherein the first substrate transfer robot is configured to access the first pod loader, the substrate activation enclosure, the substrate plating enclosure, and the substrate handoff.
18. (Original) The semiconductor plating system of claim 16, wherein the second substrate transfer robot is configured to access the second pod loader, the substrate spin rinse dry enclosure, the substrate annealing enclosure, and the substrate handoff.
19. (Original) The semiconductor plating system of claim 16, wherein the activation enclosure comprises:

a rotatably mounted substrate support member configured to support a substrate in a face up position; and

an activation fluid dispensing assembly positioned above the substrate support member and in fluid communication with at least one of an activation fluid source and a rinsing fluid source via at least one selectively actuated flow control valve.

20. (Original) The semiconductor plating system of claim 16, wherein the plating enclosure comprises:

a rotatably mounted substrate support member configured to support a substrate in a face up position; and

a plating solution dispensing assembly positioned above the substrate support member and in fluid communication with a plating solution source via a selectively actuated valve.

21. (Original) The semiconductor plating system of claim 16, wherein the plating enclosure comprises:

a rotatable substrate support member configured to support a substrate in a face up position;

a rotatably mounted evaporation shield having a substantially planar lower surface and a plating fluid dispensing channel formed therein; and

a plating fluid dispensing assembly configured to dispense a plating fluid into the plating fluid dispensing channel of the evaporation shield.

22. (Original) The semiconductor plating system of claim 21, wherein the evaporation shield is configured to be moved between a substrate processing position and a substrate loading position, wherein the processing position includes positioning the substantially planar lower surface proximate an upper surface of the substrate support member.

23. (Original) The semiconductor plating system of claim 22, wherein the evaporation shield is configured to be positioned between about 1 mm and about 10 mm from the substrate support member in the processing position.

24. (Original) The semiconductor plating system of claim 16, wherein the spin rinse dry enclosure comprises:

a rotatably mounted substrate support member configured to support a substrate in a face up position thereon, the substrate support member being configured to rotate between about 30 rpm and about 10,000 rpm; and

a rinsing fluid dispensing nozzle positioned above the substrate support member.

25-31 (Cancelled)